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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/615,577	07/13/2000	Tomoyuki Miyashita	862.C1952	4284

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

NAKHJAVAN, SHERVIN K

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 07/25/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/615,577

Applicant(s)

MIYASHITA ET AL.

Examiner

Shervin Nakhjavan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed, after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-14, citation "generating a mask pattern which has a blue noise characteristic" in claims 1, 6-10 is confusing because it is unclear if the mask itself has a blue noise characteristic or is the mask masking areas of an image with said characteristics, in claims 11, 13 and 14 first paragraph, citation "binarizing each coefficient of a mask" is confusing as if the mask itself has coefficients and in addition the mask has peaks based on the binarization value. In paragraph four under means for making citation "each coefficient of the two-dimensional mask correspond to each bit information of the additional information" is confusing as if each and every one of the *coefficients* of the mask corresponds to each and every one of the *bit* information of the additional information or there is a one-to-one correspondence. Paragraph five, under digital watermark embedding, citation "adding/subtracting" is confusing as if we are adding and subtracting, i.e. sequentially, simultaneously, or adding or subtracting selectively. On the same paragraph citation "on the basis of positional relationship obtained by assigning the two-dimensional mask onto *the image data* as a correspondence result" is confusing as what is the relevance of assigning the mask onto

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the *image data* and it's corresponding result to the previous paragraph of citing making each coefficient of the mask to correspond to each bit of the information of the *additional information*, in another words there are two correspondence results obtained by paragraph four and paragraph five which are not connected to each other and it is further unknown at what point the embedding of the bits are performed. Therefore, these citations are vague and confusing because it is unclear by this language what features or elements are claimed (See discussion above of paragraph one), how the features and elements of the claims are utilized (See discussion above of paragraph five), and how are features and elements of the claims are related to each other (See discussion above of paragraph six) and further limit the claims.

Claims 2-5 and 12 are dependent from an indefinite base claims and are thus themselves indefinite.

35 USC § 112 6th

3. The following is a quotation of the sixth paragraph of 35 U.S.C. 112 (See the Supplemental Examination Guidelines for determining the Applicability of 35 U.S.C. 112 6th, 65 Federal Register 38510):

112 sixth paragraph gives claims their broadest reasonable interpretation, in light of and consistent with the written description of the invention in the application. Thus, a claim limitation will be interpreted to invoke 35 U.S.C. 112 6th if it meets the following 3-prong analysis: (1) The claim limitation must use the phrase "means for" or "step for"; (2) the "means for" or "step for" must be modified by functional language; and (3) the phrase "means for" or "step for" must not be modified by sufficient structure, material, or acts for achieving the specified function. With respect to the first prong of this analysis, a claim element that does not include the phrase "means for" or "step for" will not be considered to invoke 35 U.S.C. 112, 6th.

4. Claims 1-5, 8 and 11, invoke 35 U.S.C. 112, sixth Paragraph Limitation

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Adler et al. (US 6,088,123).

Regarding claims 1-6, Adler teaches, limitation of claim 1, an image processing apparatus for embedding predetermined information in image data, comprising: generating means for generating a mask pattern which has a blue noise characteristic and specifies a target embedding position in an M X N size (Column 2, Lines 45-50 where masks are generated corresponding to blue noise characteristics of an image); and embedding means for applying the mask pattern to part of the image data and modulating image data corresponding to the target embedding position to embed the predetermined information (Column 2, Lines 57-60, where watermarks are the predetermined target information that are embedded into an image by applying combination of masks to the image and modulating the image accordingly as discussed in column 5, Lines 24-28);

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limitation of claim 2, the mask pattern is represented by binary information (Column 7, Lines 20-39, where masks having pixel combination of black and white status refers to their binary states);

limitation of claim 3, in the mask pattern, the target embedding position and a non-target embedding position in the M X N size are represented by binary information Column 2, Lines 57-60, where any position in a digital image watermarking are inherently represented by a binary information);

limitation of claim 4, the modulation is performed by quantizing the image data corresponding to the target embedding position (Column 2, Line 61 through Column 3, Line 13, where masking is quantized to combination of masks inherently for embedding information such as a watermark into an image);

limitation of claim 5, said embedding means repeatedly applies the mask pattern to a portion other than the part of the image data and modulates the image data corresponding to the target embedding position to embed the predetermined information (Column 3, Lines 54-65, where combination of masks A and B are generated within a main mask C and they are applied according to their specified location within the main mask onto the scanned image and the corresponding target embedding position repeatedly inherently);

limitation of method claim 6 is inherently taught by teachings of implementation steps of apparatus of figure 1 discussed in claim 1.

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7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Knox (US 5,734,752).

Regarding claims 8-10, Wang teaches, limitation of claim 9, an image processing method of extracting predetermined information from image data in which the information has been embedded, comprising: the generation step of generating a mask pattern which has a blue noise characteristic and specifies a target embedding position in an M X N size; and the extraction step of applying the mask pattern to part of the image data and detecting a modulated state of image data corresponding to the target embedding position to extract the predetermined information (Column 7, Lines 44-65, where the masks of figures 3 and 4 are generated which are stochastic screens (corresponding to blue noise of an image column 5, lines 44-52) and if stochastic or mask of figure 3 is placed on top of the mask of figure 4, the encoded or embedded information is extracted);

limitation of apparatus and programming claims 8 and 10 corresponding to method claim 9 (Column 9, Lines 8-11).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Addler et al..

Regarding claim 7, While Addler teaches a system and corresponding method of the steps of the claimed invention, Addler fails to specifically teach an image processing program of the claim. It would have been obvious to an ordinary skilled in the art knowing algorithm and corresponding steps of figures 1-6 of Addler's system in addition to teachings discussed above, to come up with a computer algorithm to perform these functions as sequentially set up in the system.

Other prior art cited

11. Prior art of record cited and not relied upon is considered pertinent to applicant's disclosure.

The US patent 6,438,251; US Patent 6,208,735; 6,061,793; US Patent 6,037,984; US Patent 6,031,914; US patent 5,893,101; US Patent 5,790,703; US Patent 5,687,236 are related to applicant's invention as teaching digital watermarking with masking of certain frequencies or other characteristics of an image.

Contact information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shervin Nakhjavan whose telephone number is (703) 306-5916. The examiner can normally be reached on Monday through Friday from 8:00 am to 5:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau, can be reached at (703) 305-4706.

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Any response to this action should be mailed to:

Assistant Commissioner for Patents
Washington, DC 20231

Or faxed to:

(703) 872-9314 for *formal* communications, please mark "**EXPEDITED PROCEDURE**"

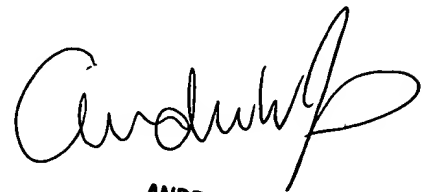
or:

for *informal* or *draft* communications; please label "**PROPOSED**" or "**DRAFT**".

Hand delivered responses should be brought to Crystal Park 2, 2121 Crystal drive, Arlington, VA, sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Tech center 2700 customer service office **(703) 306-0377**.

Shervin Nakhjavan S.N
Patent Examiner
Group Art Unit 2621
July 21, 2003.


ANDREW W. JOHNS
PRIMARY EXAMINER